

Claims

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1. A method of exchanging information between at least some slots of a first T-carrier and some other non-coincidental slots of a second T-carrier, such

5 method comprising the steps of:

exchanging information between successive slots of the first T-carrier and respective predetermined memory locations within a memory device; and

10 exchanging information between successive slots of the second T-carrier and at least some of the predetermined locations in memory of the first T-carrier based upon a channel-exchange list relating at least some channels of the first T-carrier to at least some other channels of the second T-carrier.

15 2. The method of exchanging information as in claim 1 wherein the step of exchanging information between successive slots of the first T-carrier and a respective predetermined memory location within a memory device further comprises incrementing a first counter coincident with a slot progression of the first T-carrier.

20 3. The method of exchanging information as in claim 2 further comprising resetting the first counter upon detecting a first slot of a repeating multi-frame of the first T-carrier.

25 4. The method of exchanging information as in claim 3 further comprising determining the predetermined memory locations of the first T-carrier by adding an output of the first counter to a base memory address.

5. The method of exchanging information as in claim 1 further comprising retrieving the channel-exchange list from a lookup table.

5 *Sub A* The method of exchanging information as in claim 1 wherein the step of exchanging information between successive slots of the second T-carrier and at least some of the predetermined locations in memory of the first T-carrier based upon a channel-exchange list further comprises incrementing a second counter coincident with a slot progression of the second T-carrier.

10 15 *Sub B* 7. The method of exchanging information as in claim 6 further comprising resetting the second counter upon detecting a first slot of a repeating multi-frame of the second T-carrier.

20 *Sub C* 8. The method of exchanging information as in claim 7 further comprising determining the predetermined memory locations of the first T-carrier by adding an output of the counter to a base memory address of the lookup table.

25 9. The method of exchanging information as in claim 8 further comprising retrieving a predetermined memory location of the predetermined memory locations of the first T-carrier from a lookup table memory address determined by adding the output of the counter and the base memory address of the lookup table.

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- Sub B1*
10. The method of exchanging information as in claim 1 further comprising defining the first T-carrier as a plurality of T-carriers.
- 5 11. The method of exchanging information as in claim 10 further comprising exchanging information between a plurality of first T-carriers and respective predetermined memory locations within the memory device.
- 10 *Sub B1* 12. The method of exchanging information as in claim 11 further comprising defining the second T-carrier as a second T-carrier.
- 15 13. The method of exchanging information as in claim 12 further comprising coupling the second T-carrier to a T-carrier interface device.
- 20 14. The method of exchanging information as in claim 13 further comprising locating the plurality of predetermined memory locations in a plurality of memory devices.
- 25 15. The method of exchanging information as in claim 14 further comprising multiplexing information between the predetermined locations of the plurality of first T-carriers and the T-carrier interface device of the second T-carrier.
- 30 *Sub B1* 16. Apparatus for exchanging information between at least some slots of a first T-carrier and some other

non-coincidental slots of a second T-carrier, such apparatus comprising:

- means for exchanging information between successive slots of the first T-carrier and respective predetermined memory locations within a memory device;
- and
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means for exchanging information between successive slots of the second T-carrier and at least some of the predetermined locations in memory of the first T-carrier based upon a channel-exchange list relating at least some channels of the first T-carrier to at least some other channels of the second T-carrier.

- 15 17. The method of exchanging information as in claim 1 wherein the step of exchanging information between successive slots of the first T-carrier and respective predetermined memory locations within the memory device further comprises compressing the information from the successive slots of the first T-carrier.

Sub 18. The method of exchanging information as in claim 17 wherein the step of compressing the information from the successive slots of the first T-carrier as both compressed and uncompressed versions in the predetermined memory locations of the memory device.

19. The method of exchanging information as in claim 18 further comprising defining the channel-exchange list as a compression status list.

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20. The method of exchanging information as in claim 1 further comprising de-compressing the information of successive slots of the first T-carrier.
- 5 21. The method of exchanging information as in claim 20 further comprising overwriting at least some of the predetermined memory locations with de-compressed data based upon a compression status list relating at least some channels of the first T-carrier to at least some 10 other channels of the second T-carrier.
22. The apparatus for exchanging information as in claim 16 wherein the means for exchanging information between successive slots of the first T-carrier and a 15 respective predetermined memory location within a memory device further comprises means for incrementing a first counter coincident with a slot progression of the first T-carrier.
- 20 23. The apparatus for exchanging information as in claim 22 further comprising means for resetting the first counter upon detecting a first slot of a repeating multi-frame of the first T-carrier.
- 25 24. The apparatus for exchanging information as in claim 23 further comprising means for determining the predetermined memory locations of the first T-carrier by adding an output of the first counter to a base memory address.

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25. The apparatus for exchanging information as in
claim 23 further comprising means for retrieving the
channel-exchange list from a lookup table.
- 5 26. The apparatus for exchanging information as in
claim 25 wherein the means for exchanging information
between successive slots of the second T-carrier and at
least some of the predetermined locations in memory of
the first T-carrier based upon a channel-exchange list
10 further comprises means for incrementing a second
counter coincident with a slot progression of the
second T-carrier.
- 15 27. The apparatus for exchanging information as in
claim 26 further comprising means for resetting the
second counter upon detecting a first slot of a
repeating multi-frame of the second T-carrier.
- 20 *Su 10* 28. The apparatus for exchanging information as in
claim 24 further comprising means for determining the
predetermined memory locations of the first T-carrier
by adding an output of the counter to a base memory
address of the lookup table.
- 25 29. The apparatus for exchanging information as in
claim 28 further comprising means for retrieving a
predetermined memory location of the predetermined
memory locations of the first T-carrier from a lookup
table memory address determined by adding the output of
30 the counter and the base memory address of the lookup
table.

- Sub B1*
30. The apparatus for exchanging information as in claim 16 further comprising means for defining the first T-carrier as a plurality of T-carriers.
- 5 31. The apparatus for exchanging information as in claim 30 further comprising means for exchanging information between a plurality of first T-carriers and respective predetermined memory locations within the memory device.
- 10 32. The apparatus for exchanging information as in claim 31 further comprising means for coupling the second T-carrier to a T-carrier interface device.
- 15 33. The apparatus for exchanging information as in claim 32 further comprising means for locating the plurality of predetermined memory locations in a plurality of memory devices.
- 20 34. The apparatus for exchanging information as in claim 33 further comprising means for multiplexing information between the predetermined locations of the plurality of first T-carriers and the T-carrier interface device of the second T-carrier.
- 25 35. Apparatus for exchanging information between at least some slots of a first T-carrier and some other non-coincidental slots of a second T-carrier, such apparatus comprising:
- 30 a first address controller adapted to exchange information between successive slots of the first T-

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carrier and respective predetermined memory locations within a memory device; and

5 a second address controller adapted to exchange information between successive slots of the second T-carrier and at least some of the predetermined locations in memory of the first T-carrier based upon a channel-exchange list relating at least some channels of the first T-carrier to at least some other channels of the second T-carrier.

10 36. The apparatus for exchanging information as in claim 35 wherein the first address controller further comprises a first counter adapted to be incremented synchronously with slot progression of the first T-carrier.

15 37. The apparatus for exchanging information as in claim 36 further comprising a synchronization reset adapted to reset the first counter upon detecting a first slot of a repeating multi-frame of the first T-carrier.

20 38. The apparatus for exchanging information as in claim 36 further comprising a lookup table adapted to provide a channel-exchange list.

25 39. The apparatus for exchanging information as in claim 38 wherein the second address controller further comprises a second counter coincident adapted to be incremented in synchronism with a slot progression of the second T-carrier.

40. The apparatus for exchanging information as in claim 39 further comprising a reset controller adapted to reset the second counter upon detecting a first slot of a repeating multi-frame of the second T-carrier.

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~~Subj 10~~ The apparatus for exchanging information as in claim 39 further comprising an adder adapted to determine the predetermined memory locations of the first T-carrier by adding an output of the counter to a base memory address of the lookup table.

42. The apparatus for exchanging information as in
claim 41 further comprising a memory controller adapted
to retrieve a predetermined memory location of the
predetermined memory locations of the first T-carrier
from a lookup table memory address determined by adding
the output of the counter and the base memory address
of the lookup table.

20 43. The apparatus for exchanging information as in
claim 34 wherein the first T-carrier further comprises
a plurality of T-carriers.

44. The apparatus for exchanging information as in
claim 34 further comprising a multiplexer adapted to
multiplex information between the predetermined
locations of the first T-carriers and the second T-
carrier.

30 45. A method of exchanging information between a first plurality of T-carriers and a second T-carrier coupled

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to a T-carrier interface device, such method comprising the steps of:

- exchanging information between successive slots of the plurality of T-carriers and a respective predetermined memory location within a memory device;
- 5 and

- exchanging information between successive slots of the T-carrier interface device and at least some of the predetermined locations in memory of each of the 10 plurality of T-carrier channels.

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15 46. The method of exchanging information as in claim 45 further comprising compressing at least some of the information exchanged between the first plurality of T-carriers and respective predetermined memory locations within the memory device.

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20 47. The method of exchanging information as in claim 45 further comprising decompressing at least some of the information exchanged between the respective predetermined channel locations within the memory device and the T-carrier interface device.

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25 48. The method of exchanging information as in claim 47 wherein the step of exchanging compressed information between the successive slots of the T-carrier interface device and the predetermined channel locations in memory further comprising selecting a slot of the T-carrier interface device and locating the respective predetermined channel locations of the 30 memory device.

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49. The method of exchanging information as in claim 48 wherein the step of locating the respective predetermined channel locations of the memory device further comprises entering a lookup table using an identifier of the selected slot of the T-carrier interface device as an index into the lookup table and retrieving an identifier of a corresponding memory location.
50. The method of exchanging information as in claim 49 wherein the step of retrieving a corresponding memory location further comprises selecting a memory device of a plurality of memory devices.
51. The method of exchanging information as in claim 50 wherein the step of selecting a memory device further comprises retrieving an identifier of the memory device of a plurality of memory devices.
52. The method of exchanging information as in claim 51 wherein the step of selecting a memory device further comprises routing a contents of the corresponding memory location from the identified memory device to the T-carrier interface device through a multiplexer.
53. The method of exchanging information as in claim 52 wherein the step of exchanging information between each slot of the plurality of T-carrier channels and the respective predetermined memory location within the memory device further comprises performing a serial to parallel conversion.

54. The method of exchanging information as in claim
53 wherein the step of exchanging information between
successive slots of the T-carrier interface device and
5 the predetermined locations in memory of each of the
plurality of T-carrier channels further comprises
performing a parallel to serial conversion.

55. A method of exchanging information between at
10 least some slots of a first T-carrier and some other
non-coincident slots of a second T-carrier, such method
comprising the steps of:

15 compressing the information of successive slots of
the first T-carrier;
storing the information of the successive slots as
compressed and uncompressed versions of the information
of the first T-carrier in predetermined memory
locations of a memory device; and
20 exchanging information between successive slots of
the second T-carrier and at least some of the
predetermined locations based upon a compression status
and channel-exchange list relating at least some
channels of the first T-carrier to at least some other
channels of the second T-carrier.

25 56. A method of exchanging information between at
least some slots of a first T-carrier and some other
non-coincident slots of a second T-carrier, such method
comprising the steps of:

30 exchanging information between successive slots of
the first T-carrier and respective predetermined memory
locations within a memory device;

- de-compressing the information of successive slots of the first T-carrier; and
- overwriting at least some of the predetermined memory locations based upon a compression status list
- 5 relating at least some channels of the first T-carrier to at least some other channels of the second T-carrier.

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